SMA Data Topics

This section provides the following information:

- Default Copying
- Sequence of Generated Jobs
- Parameters for New Products
- Important BS2000 Parameters

Default Copying

During JCL generation, SMA must be able to find the datasets. Therefore, all copy steps for Software AG's installation datasets must be controlled by SMA.

The JCL generator inspects the descriptions of the datasets and produces copy steps to copy all libraries from tape to disk which have not yet been copied.

SMA makes some assumptions about copying. These are based on the library group parameters.

- Dataset names (DSNs) for datasets on disk are created by concatenating the default DSN prefix, which is stored in the parameter LIB-GROUP, with a period (.) and the DSN as it is stored on tape. For example, if the value of the parameter LIB-GROUP is SAGLIB, the name of the Natural load library will be SAGLIB.NAT234.LOAD. If the last character of the LIB-GROUP parameter value is an asterisk (*), the period and the asterisk will be omitted in the dataset name on disk.
- The name and device type of the disk are taken directly from the parameter LIB-GROUP-VOLSER or LIB-GROUP-UNIT, respectively.
- The space allocation is computed based on the dataset size. In OS/MVS, the type of space allocation (block, track, cylinder) is selected depending on the value of the parameter LIB-GROUP-ALLOTYPE.

Creation of Library Copies

The first phase of the JCL generator determines which libraries have to be copied. A library is copied from the delivery library if:

- it does not exist according to the current value of the LIB-GROUP parameter, and
- it belongs to a product which is installed or to be installed in this environment.

At this point, the JCL generator enters the default dataset names, etc., as described above, into the list of dataset names. These entries are marked as "to be copied". The creation of a copy entry is normally done by the JCL generator. If the user wishes to control this copy process, he/she must proceed as described in Controlled Copying in the section Using System Maintenance Aid.

Sequence of Generated Jobs

Four groups of jobs are generated (xxx represents a three-digit number):

- T*xxx:* Tape copy jobs. These jobs copy the libraries and the marked datasets. One job is generated per tape.
- P*xxx:* Preparatory jobs. These jobs perform preparatory tasks for the installation.
- I*xxx:* Installation jobs. The last Ixxx job changes the status of products and parameters from "to be installed" to "installed".
- Other jobs are example jobs, which might be useful to the user, but are not part of the product installation.

The jobs are generated in the sequence given in the following table.

Job Name	Description
P010	Create the SAGLIB
P020	Define/restore libraries/sublibraries
P040	Catalog procedures
P060	Preparation instructions
P080	Delete/define VSAM clusters
I003	Create conversion jobs
I005	Update CICS tables
I006	Update CICS tables with utility
I008	Allocate datasets
I009	Copy datasets
I010	Install permanent ADASVC
I011	Install temporary ADASVC
I020	Adabas IOR parameters and defaults
I025	Com-plete installation steps
I026	Com-plete migration steps
I030	Define and format the Adabas database
I040	Start the Adabas nucleus
I050	Load Adabas files into database
I051	Migration job
I052	Define VSAM datasets
I053	IMS PSB/DBD/ACB generation
I054	Assemble NATPARM if common for batch/online
I055	Preparations for linking batch Natural
I056	Auxiliary assembly jobs
I060	Assemble NATPARM and link batch Natural
I061	Load Natural applications with INPL
I065	Example jobs to test NATBAT
I070	Preparations for linking online Natural
I075	Auxiliary jobs online Natural
I080	Assemble NATPARM and link online Natural
I081	Initialize VSAM roll files
I082	Migration job
I088	Link the Adabas Link modules
I090	Catalog thread part into Com-plete

Job Name	Description
I100	Setup and installation verification
I200	Setup jobs
I500	Migration jobs
I999	SMA: commit environment, tapes and/or library corrections; generate Environment Report
E100	Load example jobs
E600	Predict migration steps
Z010	Apply ZAPs
Z020	Load corrections with INPL

Note:
This table does not contain the complete list of jobs. New jobs may be introduced when the need arises.

Generated Steps

SMA generates the steps which are necessary in a given situation, based on the following conditions:

- The step belongs to the installation sequence of a product which is to be installed.
- The step contains lines which are dependent on a product which is to be installed.
  Example: Many subproducts of Natural affect the Natural parameter module. Thus, this parameter module will be generated whenever such a subproduct is installed.
- The step contains parameters which have a new value.
  In some cases, too many steps will be generated (for example, when changing the name of the batch Natural nucleus or the name of the assembler), because SMA cannot decide whether changing a parameter requires the re-execution of the corresponding step.
- The step is a logical successor of a step already selected.
  Example: A new parameter module must be assembled; afterwards, Natural must be linked.
- The step is a logical successor of a ZAP or source change.

Parameters for New Products

When running LOAD for a new product delivery tape you will get a report on which new parameters have been loaded. This can be used to prepare the installation of a new product.

Before installing any product you should inspect parameter group OPTION. These parameters give the user control over how a product is installed.

Typical OPTION parameters are:

NAT-FIRST-INSTALL	This parameter must be set to "Y" if the product is installed for the first time. In this case, more installation steps may be needed than otherwise.
SAG-EDITOR	Install the Software AG editor when installing Natural.

The list of OPTION parameters grows dynamically as new products are loaded into SMA. Thus, it is not possible here to document a complete list. Make sure you inspect the parameters currently available here.

Important BS2000 Parameters

The parameters mentioned in this section control the adaptation of the jobs to BS2000.

- Parameter LMS
- Parameters JOBLIB / REPLIB / ENVMOD / SMALIB
- SMALIB
- Parameter JV
- Parameters PASSWORD / FILEATTR

Parameter LMS

LMS must be set to YES.

The name of the LMS phase (for example, LMS=$TSOS.LMS) must be specified.

If LMS=$LMS (using LMS):

- Module, macro and source libraries are created using LMS.
- All generated JCL (jobs, procedures, data files) is stored in LMS library <joblib> and are started like /E joblib(E.I061).
- All SYSOUT message files are stored in LMS library <replib> (see parameters JOBLIB and REPLIB below).

Parameters JOBLIB / REPLIB / ENVMOD / SMALIB

The parameter JOBLIB contains the name of the job library. This library contains:

- All jobs, procedures and data files generated by SMA.
- All modules which are assembled during the installation process (see parameter ENVMOD below).
  If LMS is not used: The modules are stored in an LMR library named <joblib>, all other files in separate SMA files named <joblib>.<membername>.
- If new JCL is generated and an old job library already exists from a former installation SMA will
    - erase all the old installation jobs (LMS type J, members with prefix E.)
    - add the new installation jobs
    - add or replace all other members

The library which is identified by parameter REPLIB contains all SYSOUT message files.

The library which is identified by parameter ENVMOD contains those modules that are needed in the production environment after the installation has terminated.

The user may specify the same value for the parameters JOBLIB, REPLIB and ENVMOD. You are recommended to choose short names for the libraries.

> **Note:**
> Some passwords may be found in the job library (not in REPLIB). This library should be protected against unauthorized access.

The LOGON user ID should be specified in the values of the JOBLIB and ENVMOD parameters, but not in the library specified in the parameter REPLIB.

Example:

```
JOBLIB=$INSTALL.J1
  REPLIB=R1
  ENVMOD=$PRODUCT.E1
```

SMALIB

SMALIB is used to store P.SMAHOME and additional D-members for Natural command sequence starting with SMA.

- P.SMAHOME has only one single procedure for all occasions that need SMA direct commands. It is called by P.JCLGEN, P.COMMIT, P.TABLOAD, and by online JCL generation. It is created in the environment where SMA is installed, and it is put into the library specified by parameter SMALIB/BASIC.
- To catalog SMALIB, SHARE=YES,RDPASS=... specify the READPASS word in parameter SMALIB/BASIC. In this case, SMALIB should not be equal to JOBLIB.
- In an environment without SMA: set parameter "SMALIB" to the name of the SMALIB where SMA is installed.
  In an environment without SMA, SMALIB should not be equal to JOBLIB.

Parameter JV

If job variables are to be used, JV=Y must be specified, else JV=N must be specified.

If the product JV (BS2000) is not available on the BS2000 host, JV=N must be specified.

In NATBS2B (contained in library NATnnn.SRC), the line beginning with &JV must be modified as follows:

&JV ... SETC 'ON' ...   if job variables are used.

&JV ... SETC 'OFF' ...   if job variables are not used.

The following consequences result from the above mentioned specifications:

If JV=Y:

- TSOSLNK and batch Natural are controlled via monitor job variables. The normal/abnormal end of each link run and batch Natural run will be reported in file L.REPORT.
- Restart jobs after error:
  The names of the current installation job and its current job step are written to a job variable. The name of this job variable is given by parameter V-SMAJV.
  If an installation job is interrupted (due to an error, /CANCEL command, etc.), it can be restarted without any modifications. The job will continue processing with the interrupted job step. If the job is not to be restarted, the job variable must be erased.
- Job variables are required for Automated Installation (in addition: parameter "RR" must be set to "Yes").

If JV=N:

- The user should read the job output of all TSOSLNK and batch Natural jobs to check whether the jobs terminated normally. File L.REPORT will only contain a message indicating that these jobs terminated.
- Before restarting an interrupted job, the job must be modified to ensure that it will start processing at the interrupted job step.
- Automated Installation cannot be used.

Parameters PASSWORD / FILEATTR

When copying files from the installation tapes to disk the user may want to protect the disk files against unauthorized access. Therefore, the parameters FILEATTR1, FILEATTR2 (parameter group BASIC) must be used. Their default values are:

FILEATTR1: access=read

FILEATTR2: share=yes

If the user protects any file by a password the installation jobs have to know it; therefore, parameter PASSWORD must be specified.